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EXAMINER	
TANG, KENNETH	

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte NICK P. DIVITTORIO

Appeal 2009-1000
Application 09/449,912
Technology Center 2100

Decided[1]: April 30, 2009

Before LEE E. BARRETT, LANCE LEONARD BARRY, and STEPHEN C. SIU, *Administrative Patent Judges*.

SIU, *Administrative Patent Judge*.

DECISION ON APPEAL

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[1] The two month time period for filing an appeal or commencing a civil action, as recited in 37 CFR § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date.

STATEMENT OF THE CASE

This is a decision on appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1-26. We have jurisdiction under 35 U.S.C. § 6(b). An oral hearing was held on April 23, 2009. We affirm-in-part.

The Invention

The disclosed invention relates generally to control programs in industrial processes (Spec. 1). Specifically, a control processor includes an embedded control task that executes to carry out computations including setpoint values that are distributed to relevant control blocks (Spec. 3-4).

Independent claim 1 is illustrative:

> 1. A control processor for executing a set of control tasks defining dynamic model-based interactive control of an industrial process, the control processor comprising:
>
> an embedded control task comprising a multivariable linear program including a set of output values corresponding to process setpoints; and
>
> a set of control blocks including regulatory control blocks having output values that are transmitted by the control processor to field devices coupled to the industrial process, wherein the embedded control task executes at a lower execution priority than an execution priority of the set of control blocks.

The References

The Examiner relies upon the following references as evidence in support of the rejections:

Messih	US 5,526,794	Jun. 18, 1996
Sinibaldi	US 6,549,945 B1	Apr. 15, 2003 (filed Mar. 11, 1999)

The Rejections

1. The Examiner rejects claims 1-7, 13-19, 25, and 26 under 35 U.S.C. § 103(a) as being unpatentable over Admitted Prior Art ("AAPA") and Sinibaldi.
2. The Examiner rejects claims 8-12 and 20-24 under 35 U.S.C. § 103(a) as being unpatentable over AAPA, Sinibaldi, and Messih.

ISSUE #1

Appellant asserts that the cited references fail to teach or suggest "incorporating the embedded control task comprising a multivariable linear program into a control processor, *and* executing the embedded control task at a lower priority than the set of control blocks" (App. Br. 6).

The Examiner finds that Sinibaldi discloses a matrix and that "[t]his matrix is a multi-variable table which lists the tasks that are used during execution" (Ans. 8).

Did Appellant demonstrate that the Examiner erred in finding that the Matrix disclosed by Sinibaldi is equivalent or suggestive of a multivariable linear program as recited in claim 1?

FINDINGS OF FACT

The following Findings of Facts (FF) are shown by a preponderance of the evidence.

1. Sinibaldi discloses a digital signal processor (DSP) based communications adapter card (col. 2, ll. 26-27).
2. Sinibaldi discloses "[a]n example of a metric used for processing load is MIPs which represents the number of millions of instructions per second that are required by a processing operation" (col. 17, ll. 41-43).
3. Sinibaldi discloses that the DSP contains "a Matrix . . . that contains the list of functions or tasks and associated MIP requirements" (col. 18, ll. 25-27).
4. Appellant acknowledges that "[e]xecuting various program tasks at different priority levels was indeed well known at the time of the invention" (App. Br. 7).

PRINCIPLES OF LAW

Obviousness

The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, and (3) the level of skill in the art. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966).

ANALYSIS (ISSUE #1)

As set forth above, Sinibaldi discloses a table of MIP values corresponding to individual tasks performed by a digital signal processor (FF 1-3). Appellant asserts that "[t]he 'matrix' [of Sinibaldi] described at column 18, lines 25-38 is a table that merely lists a set of tasks performed by a digital signal processor (DSP) and the associated computing (MIP) requirements for each task" (Reply Br. 5) and does not constitute a "multivariable linear program" as claimed. We agree. Under a broad but reasonable interpretation that is consistent with the Specification, we construe the term "multivariable linear program" as including a computer program that includes executable code that, when executed, performs a function.

As described above, the Examiner relies on the "matrix" of Sinibaldi as the claimed "multivariable linear program." However, the Examiner has not demonstrated that the "matrix," which constitutes a look-up table of MIP

values, is executable or contains code that performs a function when executed. Likewise, we do not find, and the Examiner does not assert, that Messih discloses or suggests an embedded control task comprising a multivariable linear program. Therefore, we cannot agree with the Examiner, based on the record before us, that Sinibaldi (and/or Messih) discloses or suggests an embedded multivariable linear program, as recited in claim 1.

Independent claims 13 and 25 and dependent claims 2-12 and 14-24 each recite equivalent limitations to those discussed above regarding independent claim 1. However, independent claim 26, which Appellant groups with claim 1, does not recite the disputed limitation (i.e., an embedded multivariable linear program as recited in claim 1). Accordingly, we conclude that Appellant has met the burden of showing that the Examiner erred in rejecting claims 1-25 but has not met the burden of showing that the Examiner erred in rejecting claim 26 with respect to issue #1.

ISSUE #2

Appellant asserts that while "[e]xecuting various program tasks at different priority levels was indeed well known at the time of the invention" (App. Br. 7), the cited references fail to "provide a reason for one skilled in the art . . . to incorporate the embedded multivariable linear program that calculates set point values for the control processor into the process

controller and execute the multivariable application program at a lower assigned priority than a set of control blocks" (*id.*).

Did Appellant demonstrate that the Examiner erred in finding that the cited references fail to teach or suggest a first sequence of instructions executed at a first priority and a second sequence of instructions executed at a second level of priority exceeding that of the first as recited in claim 26?

ANALYSIS (ISSUE #2)

It is undisputed that "[e]xecuting various program tasks at different priority levels was indeed well known at the time of the invention" (FF 4). Given that executing different program tasks at different priority levels was well known in the art, we agree that executing a first sequence of instructions at a first priority and a second sequence of instructions at a second (and higher) priority would have been "well known" since such a procedure describes precisely what Appellant states was "well known" in the art.

Appellant asserts that the cited references fail to teach or suggest incorporating "the embedded multivariable linear program . . . into the process controller" and executing "the multivariable application program at a lower assigned priority than a set of control blocks" (App. Br. 7). However, as set forth above, claim 26 fails to recite such requirements such as an "embedded multivariable application program" or "set of control blocks".

For at least the aforementioned reasons, we conclude that Appellant has not sustained the requisite burden on appeal in providing arguments or evidence persuasive of error in the Examiner's rejection of claim 26 with respect to issue #2.

CONCLUSION OF LAW

Based on the findings of facts and analysis above, we conclude that Appellant has demonstrated that the Examiner erred in finding that the Matrix disclosed by Sinibaldi is equivalent or suggestive of a multivariable linear program as recited in claim 1. However, Appellant has not demonstrated that the Examiner erred in finding that the cited references fail to teach or suggest a first sequence of instructions executed at a first priority and a second sequence of instructions executed at a second level of priority exceeding that of the first as recited in claim 26.

DECISION

We affirm the Examiner's decision rejecting claim 26 under 35 U.S.C. § 103 but reverse the Examiner's decision rejecting claims 1-25 under 35 U.S.C. § 103.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED-IN-PART

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